

MISCELLANEOUS PHENOMENA.

Prairie and Forest Fires.—Creswell, Kans., 3rd, 5th, 7th, 12th, 14th, 15th, 18th, 19th, 20th, 21st, 22nd, 23rd and 25th; Mt. Solon, Va., 6th, 7th, and 17th on mountains; Pike's Peak, 5th and 6th; Fort Sill, 7th, 8th, 10th, 24th, 26th and 30th; Fort Gibson, 2nd, 3rd, 4th, 5th, 6th, 7th, 19th, 21st, 23rd, and 25th; Dodge City, 19th; Henrietta, Tex., 7th; Pembina, 4th, 7th, 8th, 10th; Boerne, Tex., 23rd.

Meteors.—Mr. Chas. G. Boener, of Vevay, Ind., in a special report upon the November meteors, states that observations were made from the 10th to 16th, inclusive: "The nights of the 10th, 11th and 12th, were more or less cloudy and foggy, but that of the 13th presented a clear, bright sky, attended by a mild and dry atmosphere, without any obstacle to interpose the most favorable opportunity for observations. The display did not, in anywise, approximate, either in numbers or brilliancy, those of former years. The total number counted, in six hours, on the night of the 13th, was 44; seven of the 1st magnitude, fifteen of the 2nd, eighteen of the 3rd, and four of the 4th. During the night of the 14th, threatening and rainy weather prevailed, and the nights of the 15th and 16th were not marked by any special phenomena. Many of our people who have been misled by the predictions and speculations of Prof. Tice, of St. Louis, after having sacrificed several nights, watching in vain, for the expected shower, feel chagrined over their disappointment, and are now very emphatic in expressing grave doubts about the wisdom and ability of their great favorite weather oracle." Trenton, N. J., 24th, 3:45 a. m., "very brilliant meteor passed from north to south, looking nearly as large as a barrel and accompanied by a hissing noise; as it neared the earth it exploded like a rocket;" Southington, Conn., 16th; Anna, Ill., 13th and 22nd; Lyndon, Ill., 15th; New Corydon, Ind., 1st, 3rd, 4th, 12th, 13th, 14th, 25th and 26th; St. Meinrad, Ind., 7th and 13th; Ft. Dodge, Ia., 24th; Yates Center, Kan., 3rd; Woodstock, Md., 3rd, 4th, 7th, 12th, 13th, 14th, 15th, 16th, 20th, 29th and 30th; Emmitsburg, Md., 21st; Sandy Springs, Md., 30th; New Bedford, Mass., 10th, 16th and 30th; Rowe, Mass., 7th and 22nd; Ypsilanti, Mich., 1st and 9th; Brookhaven, Miss., 8th; Fayette, Miss., 2nd, 15th and 16th; Oregon, Mo., 12th, 15th and 29th; Independence, Mo., 8th; Plattsmouth, Neb., 2nd, 13th, 14th and 15th; Genoa, Neb., 11th; Vineland, N. J., 16th; Linden, N. J., 17th; Waterburg, N. J., 7th and 9th; Ithaca, N. Y., 13th and 14th; Hector, N. Y., 11th; North Lewisburg, Ohio, 13th; McMinnville, Tenn., 6th; Pike's Peak, Col., 20th; Indianola, Tex., 5th, (13th, counted 48 from 2 to 4 a. m.); Pensacola, Fla., 12th and 13th; Springfield, Ill., 20th; Davenport, Ia., 13th; St. Louis, Mo., 12th, several; Louisville, Ky., 14th and 29th; Savannah, Ga., 12th, 13th, 20th and 24th; Smithville, N. C., 14th; Boise City, Idaho, 14th and 21st; Punta Rassa, Fla., 13th. The Bucyrus (Ohio) *Journal*, November 15th, states: "during the early morning, a farmer of White's township was struck by an aerolite, which passed entirely through his body, causing instant death. The meteor appeared to come from the south-southwest and fell obliquely at an angle of about 60°" Syracuse, N. Y., 28th, about 5 a. m., a "heavy explosion was heard and a bright light was seen in the northwestern sky, which was supposed to have resulted from the passage of a meteor." On the north fork of the Canadian river, Indian Territory, 13th, between 1 and 3 a. m., meteors were seen to fall like hail. In Missouri, "very few meteors were seen on the 13th and 14th, although the sky was favorable at many stations; on the 18th, fifteen faint meteors were observed at Corning, Mo., between 7:30 and 10:30 p. m., which appeared to radiate from near Aquilla."

Earthquakes.—"At Arequipa, Peru, on the morning of October 2nd, 1879, a strong shock was felt, lasting 30 seconds; it is described as being the strongest felt since the great earthquake of 1868; the walls of many churches and buildings were cracked." *The North China Herald* publishes a translation of a memorial written by the Governor-General of Kansu, regarding the disastrous earthquakes in that province and Shense. The shocks extended from June 29th to July 11th, 1879, and reports of loss of life and destruction of property have been received from nearly thirty cities and districts. On July 1st a violent shock occurred causing the ground to open; city walls, public and other buildings were leveled and a large number of people, (varying from ten in some places to 200 or 300 in others) were crushed to death. In some places only one shock was felt, in others several in succession, while in others the shocks continued for ten days." November, 1879, Costa Rica, C. A., 18th, 10:40 a. m., slight shock. Beirut, Syria, 15th, 8:35 p. m., slight shock. Boise City, Idaho, 25th, 2:04 p. m., slight shock, lasting about two seconds, vibration from east to west; this shock was also felt at Idaho City, 35 miles north of station; 26th, a second shock was felt in the latter city, but very faint. Burlington, Vt., 3rd, 7:15 a. m., slight shock lasting several seconds; some people reported the occurrence of a second shock several minutes later. Contoocookville, N. H., 4th, 7:10 a. m., slight shock causing windows to rattle.

Sunsets.—The characteristics of the sky at sunset, as indication of fair or foul weather, for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from 132 stations show 3,939 observations to have been made, of which 37 were reported doubtful; of the remainder 3,245 or 82.5 per cent were followed by the expected weather.

Grasshoppers.—Ft. Sill, 21st, disappearing, very few to be seen; Erath co., Tex., 8th, "the grasshoppers have destroyed what little wheat there was up"; Bosque co., Tex., 8th, "large fields of wheat have been destroyed, and the grasshoppers are still remaining"; Denton co., Tex., 8th, "grasshoppers have moved southwards"; Hood co., Tex., 8th, 65 acres of wheat were destroyed on one farm.

Polar Bands.—New Corydon, Ind., 16th, 21st, 24th; Guttenburg, Ia., 3rd; Yates Center, 9th; Gardiner, Me., 10th, 22nd; Freehold, N. J., 2nd, 23rd; Ringgold, Ohio, 1st; Wytheville, Va., 1st, 3rd, 5th, 21st, 22nd, 26th, 27th, 30th; Pembina, 27th; Detroit, 24th.

Mirage.—Pembina, Dak., 3rd, 25th.

Rain-bow.—Burlington, Vt., 6th, during a light fall of snow the flakes were particularly noticeable for their perfect symmetry and while the sun was still above the horizon a beautiful rain-bow was formed in two segments, one in the ESE. and the other in the ENE.

Zodiacal Light.—Cambridge, Mass., regularly looked for at 8 p. m., suspected on the 4th and somewhat visible on the 7th, 10th, 16th; observations on other evenings hindered by moonlight or clouds. New Corydon, Ind., 21st, 22nd, 23rd, 24th, 25th; Monticello, Iowa, 15th; Oregon, Mo., 15th; Waterbury, N. Y., 17th; Brookhaven, N. Y., 26th.

Sun Spots.—The following record of Solar phenomena by Mr. D. P. Todd, Assistant in the Nautical Almanac Office, is communicated by him for publication in this REVIEW:—

DATE— Nov., 1879.	No. of new—		Disappeared by solar rotation.		Reappeared by solar rotation.		Total number visible.		REMARKS.
	Groups	Spots.	Groups	Spots.	Groups	Spots.	Groups	Spots.	
4th, 8 a. m...	1	1	0	0	0	0	1	1	
4th, 4 p. m...	0	0	0	0	0	0	1	1	
5th, 3 p. m...	0	0	0	0	0	0	0	0	Faculae.
7th, 8 a. m...	4	25	0	0	0	0	4	25	{ Faculae.
7th, 3 p. m...	0	0	0	0	0	0	4	25	
9th, 1 p. m...	0	0	2	10	0	0	2	11	
10th, 8 a. m...	0	4	0	0	0	0	2	11	
11th, 4 p. m...	0	4	1	1	0	0	1	14	
13th, 8 a. m...	0	4	0	0	0	0	1	18	
14th, 4 p. m...	0	0	0	0	0	0	1	4	Spots of considerable size.
16th, 8 a. m...	0	0	0	0	0	0	1	3	{ Broad areas of Faculae.
16th, 10 a. m...	0	0	0	0	0	0	1	3	
17th, 8 a. m...	0	0	0	0	0	0	1	3	
21st, 8 a. m...	0	0	1	3	0	0	0	0	Spots probably disappeared by solar rotation.
26th, 8 a. m...	0	0	0	0	0	0	0	0	Faculae.
27th, 9 a. m...	1	3	0	0	0	0	1	3	Faculae.
29th, 8 a. m...	1	3	0	0	0	0	2	4	Faculae.
30th, 11 a. m...	0	0	0	0	0	0	1	3	

NOTE:—On the 1st, at 5 p. m.; 2nd, 5 p. m.; 22nd, 8 p. m.; 23rd, 9 a. m.; 24th, 8 a. m.; 25th, 4 p. m. the sun was also observed by Mr. Todd, but was entirely free from spots or faculae.

Prof. Hinrichs, Iowa City, Ia., reports, "sunspots large, indicating that the very protracted period with few or no spots is now definitely closed".

Mr. William Dawson, at Spiceland, Ind., observed no spots on the 2nd and 3rd, sky very poor. 4th, one small spot midway between the centre and eastern edge of the sun. 6th, a group of four spots, one large with penumbra close to the southeast margin. 12th, a large group of about 25 spots (definition poor) in the southwest quadrant; ones pot—or rather two very close together—appeared to be five or six thousand miles across; it had a large penumbra. 13th, one group of 25th spots. 16th, one group of three spots close to western edge. 18th, one spot and a considerable number of faculae at the eastern and western edges. 19th, 21st, 24th, no spots. 28th, two spots close to each other near the eastern edge, faculae. 30th, nine spots, one group, about half-way from the centre to southern edge of the sun bearing eastward; one spot quite large with penumbra.

Mr. David Trowbridge, at Waterbury, N. Y., observed the sun on the following dates, but saw no spots, 3rd, 4th, 5th, 20th, 23rd, 25th, 27th, 30th. On the 7th, at 8:30 a. m., one spot near eastern margin of the sun's disk; 8th, 25 spots; 9th, 25 spots, in a large and small group; 10th, 7:30 a. m., three spots visible in one group, and a fourth one very faint; 13th, one large spot; 16th, one spot still visible, but quite faint, and situated near the western margin. The last group has undergone many changes during its visibility.

Mr. F. Hess, of Fort Dodge, Iowa, observed spots as follows: 6th, 1 p. m., one large oblong spot with a partial penumbra, and one small one without penumbra near the southeastern limb of the sun; 7th, 8 a. m. one large round spot surrounded by a penumbra and four smaller ones with white faculae, all very distinct and lying in the southeastern quadrant; 1 p. m. one large and one small spot surrounded by a common penumbra, four others and faculae all in the southeast quadrant; 9th, 10 a. m. one large and ten smaller spots in the southeast quadrant; 14th and 15th, 1 p. m., one large and ten smaller spots in the southwest quadrant; 16th, 3 p. m. only two spots but close together and surrounded by a common penumbra in the southwest quadrant; 28th, 8 a. m. one large faint spot near the sun's lower limb; 29th, 7 a. m., one large spot with penumbra and one small spot in the southeast quadrant; 9 a. m., one large spot with penumbra and two small ones, and faculae in the southeast quadrant; 10th, 10 a. m., three spots were visible, but the weather was too hazy and windy for distinct vision. The sun was examined all other days of the month but no spots were seen.

Observations were made at Fort Whipple, Va., each day during the month but no spots observed.

NOTES AND EXTRACTS.

Meteorological Observations on the Swedish Northeast Passage Expedition.—The *Vega*, in command of Professor Nordenskiöld, was frozen in on September 28th, 1878, in 67° 7' N. and 173° 30' W. From letters dated up to April 1st, 1879, and later, the following abstract is made, (see *Nature*, November 13th, 1879.) The thickness of ice between the *Vega* and shore was as follows: 1878, September 28th, too thin to bear a man; October 3rd, thick enough for the Tchukches natives; December 1st, 56 centimetres or 22.04 inches. 1879,